

Remarks:

This amendment is responsive to the Office action dated August 2, 2006, and is being filed under 37 C.F.R. § 1.111. Claims 1-33 are pending in the application. In the Office action, the Examiner (1) rejected claims 1-9, 12, 13, 15, and 18-33 under 35 U.S.C. § 102 or § 103 as being anticipated or obvious; and (2) objected to claims 10, 11, 14, 16, and 17, indicating that these claims would be allowable if rewritten in independent form. Applicants traverse the rejections, contending that each of the pending claims is patentable over the cited references.

Nevertheless, to expedite the issuance of a patent, and to more particularly point out and distinctly claim aspects of the invention that applicants would like to patent now, applicants have (1) amended each independent claim, namely, claims 1, 13, 19, 25, 26, 30, and 33; and (2) added new independent claims, namely, claims 34-36, which correspond, respectively, to objected-to claims 10, 14, and 16. Applicants reserve the right to pursue the amended claims in their original (or distinctly amended) form, at a later time. Furthermore, applicants have presented arguments showing that claims 1-33 are patentable over the cited references. Accordingly, in view of the foregoing amendments and the following remarks, applicants respectfully request reconsideration of the application under 37 C.F.R. § 1.111 and allowance of the pending claims.

Page 13 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

I. Claim Rejections - 35 U.S.C. §§102 and 103

The Examiner rejected claims 1-9, 12, 13, 15, and 18-33 as being anticipated or obvious. Claims 1-7, 9, 12, 13, 15, 18-27, and 30-33 were rejected under 35 U.S.C. § 102(e) as being anticipated by published U.S. Patent Application No. 2003/0007024 to Fujimori ("Fujimori"). In addition, claims 8, 28, and 29 were rejected under 35 U.S.C. § 103(a) as being unpatentable over Fujimori combined with U.S. Patent No. 6,543,871 to Rosen et al. ("Rosen"). Applicants traverse the rejections, contending that all of the rejected claims are patentable over the cited references. Nevertheless, to expedite the issuance of a patent, and to more particularly point out and distinctly claim aspects of the invention that applicants would like to patent now, applicants have amended each independent claim, namely, claims 1, 13, 19, 25, 26, 30, and 33. Each of the amended independent claims is patentable at least for the reasons set forth below.

A. Claims 1-12

Independent claim 1, as amended, is directed to a method of forming images:

1. (Currently Amended) A method of forming images, comprising:
obtaining image data defining an image portion and including data elements defining a first subset and a second subset of areas of the image portion having one or more lesser amounts and one or more greater amounts, respectively, of a colorant; and
forming the image portion by placement of the colorant onto a medium during a set of overlapping passes so that the first subset of the areas is formed by ~~at least one of~~ (a) a subset of the overlapping passes, ~~[[and]]~~ (b) a predefined subset of a plurality of structures available for placing the colorant, or (c) both,
wherein forming includes forming all of the first subset and the second subset of areas of the image portion with colorant droplets of about the same size.

Page 14 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

Support for the amendments to claim 1 are included in the subject application and in the original claims. For example, Figure 7 of the application shows an exemplary flowchart in which all of the first subset and the second subset of areas of the image portion are formed with colorant droplets of about the same size (using three passes). The other amendment to claim 1 involves the replacement of the phrase "at least one of (a) a subset of the overlapping passes and (b) a predefined subset of a plurality of structures available for placing the colorant" with "(a) a subset of the overlapping passes, (b) a predefined subset of a plurality of structures available for placing the colorant, or (c) both." This additional amendment is supported by original claim 1 and is intended to clarify the meaning of the amended phrase without changing its scope.

In the Office action, claim 1 was rejected as being anticipated by Fujimori. However, claim 1, as amended, recites, in part, "forming all of the first subset and the second subset of the areas of the image portion with colorant droplets of about the same size." Fujimori, in contrast, relates to printing with ink droplets of different size during a set of overlapping passes (e.g., see Figures 6, 9, and 12). Fujimori thus does not teach or suggest every element of amended claim 1. Accordingly, claim 1 should be allowed. Claims 2-12, which depend from claim 1, also should be allowed for least the same reasons as claim 1.

Page 15 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

B. Claims 13-18

Independent claim 13, as amended, is directed to a method of forming images:

13. (Currently Amended) A method of forming images, comprising:
obtaining image data defining an image portion and including data elements, each data element corresponding to an area of the image portion and having a data value selected from a set of three or more permissible values and corresponding to an amount of a colorant for the area, data values selected from a subset of the permissible values corresponding to a subset of the areas; and
forming the image portion by placement of the colorant onto a medium during each of a set of overlapping passes so that the subset of the areas is formed by ~~at least one of~~ (a) a subset of the overlapping passes, ~~[[and]]~~ (b) a predefined subset of structures available for placing the colorant, or (c) both,
wherein forming includes forming all of the image portion with colorant droplets of about the same size.

In the Office action, claim 13 was rejected as being anticipated by Fujimori. However, claim 13, as amended, recites, in part, "forming all of the image portion with colorant droplets of about the same size." Accordingly, claim 13 should be allowed at least for the reasons described above in relation to claim 1. Claims 14-18, which depend from claim 13, also should be allowed for least the same reasons as claim 13.

C. Claims 19-24

Independent claim 19, as amended, is directed to a method of printing:

19. (Currently Amended) A method of printing with reduced registration errors, comprising:
obtaining print data defining an image portion and including data elements, the data elements defining a first subset and a second subset of the areas having one or more lesser amounts and one or more greater amounts, respectively, of a colorant; and

Page 16 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

forming the image portion by placement of the colorant onto a print medium during a set of overlapping passes of one or more printheads, so the first subset of the areas is formed by fewer of the overlapping passes than the second subset of the areas,

wherein forming includes forming all of the first subset and the second subset of the areas with colorant droplets of about the same size.

In the Office action, claim 19 was rejected as being anticipated by Fujimori. However, claim 19, as amended, recites, in part, "forming all of the first subset and the second subset of the areas with colorant droplets of about the same size." Accordingly, claim 19 should be allowed at least for the reasons described above in relation to claim 1. Claims 20-24, which depend from claim 19, also should be allowed for least the same reasons as claim 19.

D. Claim 25

Independent claim 25, as amended, is directed to a program storage device:

25. (Currently Amended) A program storage device readable by a processor, tangibly embodying a program of instructions executable by the processor to perform a method of forming images comprising:

obtaining image data defining an image portion and including data elements, the data elements corresponding to areas of the image portion and defining a first subset and a second subset of the areas having one or more lesser amounts and one or more greater amounts, respectively, of a colorant; and

forming the image portion by placement of the colorant onto a medium during a set of overlapping passes so that the first subset of the areas is formed by ~~at least one of~~ (a) a subset of the overlapping passes, ~~[[and]]~~ (b) a predefined subset of a plurality of structures available for placing the colorant, or (c) both,

Page 17 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

wherein forming includes forming all of the first subset and the second subset of the areas with colorant droplets of about the same size.

In the Office action, claim 25 was rejected as being anticipated by Fujimori. However, claim 25, as amended, recites, in part, "forming all of the first subset and the second subset of the areas with colorant droplets of about the same size." Accordingly, claim 25 should be allowed at least for the reasons described above in relation to claim 1.

E. Claims 26-29

Independent claim 26, as amended, is directed to an apparatus for forming images:

26. (Currently Amended) An apparatus for forming images, comprising:

a controller configured to obtain image data defining an image portion and including data elements, each data element corresponding to an area of the image portion and having a data value, the data values defining a first subset and a second subset of the areas having one or more lesser amounts and one more greater amounts, respectively, of a colorant, the controller including a data distribution mechanism configured to distribute portions of the image data to a set of pass assignments corresponding to a set of overlapping passes, so that the image portion can be formed according to the set of pass assignments by placement of the colorant onto a medium during each of the set of overlapping passes and with the first subset of the areas being formed by ~~at least one of~~ (a) a subset of the overlapping passes, ~~[[and]]~~ (b) a predefined subset of structures available for placing the colorant, or (c) both,

wherein forming includes forming all of the first subset and the second subset of the areas with colorant droplets of about the same size.

Page 18 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

In the Office action, claim 26 was rejected as being anticipated by Fujimori. However, claim 26, as amended, recites, in part, "forming all of the first subset and the second subset of the areas with colorant droplets of about the same size." Accordingly, claim 26 should be allowed at least for the reasons described above in relation to claim 1. Claims 27-29, which depend from claim 26, also should be allowed for at least the same reasons as claim 26.

F. Claims 30-32

Independent claim 30, as amended, is directed to a system for forming images:

30. (Currently Amended) A system for forming images, comprising:
a controller configured to obtain image data defining an image portion and including data elements, the data elements corresponding to areas of the image portion and defining a first subset and second subset of the areas having one or more lesser amounts and one or more greater amounts, respectively, of a colorant, the controller also being configured to distribute portions of the image data to a set of pass assignments corresponding to a set of overlapping passes, so that the first subset of the areas will be formed by a subset of the overlapping passes; and

one or more image forming devices configured to perform colorant placement during each of the set of overlapping passes according to the pass assignments to form the image portion,

wherein the one or more image forming devices are configured to form all of the first subset and the second subset of the areas with colorant droplets of about the same size.

In the Office action, claim 30 was rejected as being anticipated by Fujimori. However, claim 30, as amended, recites, in part, "wherein the one or more image forming devices are configured to form all of the first subset and the second subset of the areas with

Page 19 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5

colorant droplets of about the same size." Accordingly, claim 30 should be allowed at least for the reasons described above in relation to claim 1. Claims 31 and 32, which depend from claim 30, also should be allowed for at least the same reasons as claim 30.

G. Claims 33

Independent claim 33, as amended, is directed to a method of forming images:

33. (Currently Amended) A method of forming images, comprising:

a step for obtaining image data defining an image portion and including data elements, the data elements corresponding to areas of the image portion and defining a first subset and a second subset of the areas having one or more lesser amounts and one or more greater amounts, respectively, of a colorant; and

a step for forming the image portion by placement of the colorant onto a medium during a set of overlapping passes so that the first subset of the areas is formed by at least one of (a) a subset of the overlapping passes, [[and]] (b) a predefined subset of a plurality of structures available for placing the colorant, or (c) both,

wherein step for forming includes forming all of the first subset and the second subset of the areas with colorant droplets of about the same size.

In the Office action, claim 33 was rejected as being anticipated by Fujimori. However, claim 33, as amended, recites, in part, "forming all of the first subset and the second subset of the areas with colorant droplets of about the same size." Accordingly, claim 33 should be allowed at least for the reasons described above in relation to claim 1.

II. New Claims

The Examiner merely objected to dependent claims 10, 14, and 16 in the Office action, stating that each of these claims would be allowable if amended to independent form. Accordingly, applicants have added new independent claims 34-36 corresponding to objected-to claims 10, 14, and 16, respectively, as indicated in the following table:

| New Claim | Support |
|------------------|---------------|
| 34 (Independent) | Claims 1+7+10 |
| 35 (Independent) | Claims 13+14 |
| 36 (Independent) | Claims 13+16 |

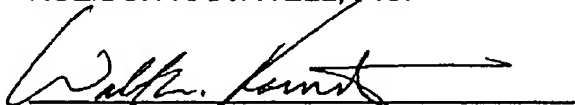
Applicants note that each of the new claims has been rewritten slightly to clarify the intended meaning of the "(a)" and "(b)" clauses in "forming the image portion," without altering the scope of the claims. Each of new claims 34-36 should be allowed for corresponding to an objected-to claim.

III. Conclusion

Applicants believe that this application is now in condition for allowance, in view of the above amendments and remarks. Accordingly, applicants respectfully request that the Examiner issue a Notice of Allowability covering all of the pending claims. If the Examiner has any questions, or if a telephone interview would in any way advance prosecution of the application, please contact the undersigned attorney of record.

Respectfully submitted,

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CERTIFICATE OF FACSIMILE TRANSMISSION

I hereby certify that this correspondence is being facsimile transmitted to Examiner Lamson D. Nguyen, Group Art Unit 2861, Assistant Commissioner for Patents, at facsimile number (571) 273-8300 on October 25, 2006.



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Page 22 - AMENDMENT
Serial No. 10/814,724
HP Docket No. 200311257-1
KH Docket No. HPC 3E5